

AEGIPHILA VITELLINIFLORA var. **EGLERI** Mold.

Additional bibliography: Mold., *Phytologia* 27: 376. 1973; Mold., *Phytol. Mem.* 2: 138 & 522. 1980.

AEGIPHILA WIGANDIOIDES Lundell

Additional bibliography: Mold., *Phytol. Mem.* 2: 59 & 522. 1980; Mold., *Phytologia* 47: 137. 1980.

- - - - -

ADDITIONAL NOTES ON THE GENUS BOUCHEA. VII

Harold N. Moldenke

The last previous installment of these notes was published in *Phytologia* 40: 413—423 (1978). For a detailed explanation of the herbarium acronyms used in this and all others in my series of papers, see *Phytologia Memoirs* 2: 463—469 (1980) with supplement in *Phytologia* 50: 268 (1982).

BOUCHEA Cham.

Additional & emended bibliography: Sandmark in L., *Amoen. Acad.* 5: 375. 1759; J. F. Gmel. in L., *Syst. Nat.*, ed. 13, imp. 2, 2: 41. 1791; Meisn., *Pl. Vasc. Gen.* 2: 198. 1840; Reichenb., *Deutsch. Bot. [Repert. Herb. Nom.]* 108. 1841; D. Dietr., *Syn. Pl.* 3: 370, 596, & 605. 1843; Lindl., *Veget. Kingd.* 664. 1846; A. L. Juss. in *Orbigny, Dict. Univ. Hist. Nat.* 13: 185. 1849; Wight, *Icon. Pl. Orient.* 4 (3): 10—11, pl. 1461 & 1462. 1849; C. Muell. in *Walp., Ann. Bot. Syst.* 5: 706. 1860; Eocq. in *Baill., Adansonia*, ser. 1 [Rec. Obs. Bot.] 2: 89, 110, 115, 124, 125, 127, 128, 132, 134, 143, & 146—148 (1862) and 3: 180—182, 184, 185, 235—237, & 241, pl. 16. 1863; Lindl., *Treas. Bot.*, imp. 1, 1: 160. 1870; Pfeiffer, *Nom. Bot.*, 2 (1): 133 & 759. 1874; Lindl., *Treas. Bot.*, imp. 2, 1: 160 (1876) and imp. 3, 1: 160. 1884; A. Gray, *Synop. Fl. N. Am.*, ed. 2, 2: 333—335. 1886; Durand, *Ind. Gen. Phan.* 320. 1888; Baill., *Hist. Pl.* 11: 94 & 102 (1891) and 11: 488. 1892; Briq. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 1, 4 (3a): 133, 135, 137, 140, 142—144, 149, & 153—154, fig. 59 A & B. 1895; Gürke in *Engl., Pflanzenw. Ost-Afr. C:* 338. 1895; Briq. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 1, 4 (3a): [381]. 1897; Lindl., *Treas. Bot.*, imp. 4, 1: 160. 1899; Millsp., *Field Columb. Mus. Publ. Bot.* 1: 523. 1902; Post & Kuntze, *Lexicon* 76 & 167. 1904; Reiche, *Estud. Crit. Fl. Chile* 5: 304. 1907; J. C. Willis, *Dict. Flow. Pl.*, ed. 3, 272. 1908; Urb., *Symb. Antil.* 4: 532—533. 1911; Fedde & Schust., *Justs Bot. Jahresber.* 39 (2): 319. 1913; Thonner, *Flow. Pl. Afr.* 468. 1915; Fedde, *Justs Bot. Jahresber.* 39 (2): 1324. 1916; Sanzin, *Anal. Soc. Cient. Argent.* 88: 106 & 133. 1919; J. C. Willis, *Dict. Flow. Pl.*, ed. 5, 90. 1925; J. Hutchins., *Fam. Flow. Pl.*, ed. 1, 1: 309 & 315. 1926;

Kobuski, Ann. Mo. Bot. Gard. 13: 16 & 23. 1926; Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 603. 1927; Chiov., Fl. Somala 56, 60, & 274. 1929; Ekman, Arkiv Bot. Stockh. 22A: 51. 1929; A. W. Hill, Ind. Kew. Suppl. 7: 260. 1929; Levyns, Guide Fl. Cape Penins. 216. 1929; Good & Exell, Journ. Bot. 68: Suppl. 140. 1930; Pio Corrêa & Pena, Diccion. Pl. Uteis Bras. 3: 394 & 395. 1931; Marloth, Fl. S. Afr. 3: 146. 1932; A. Chev., Rev. Bot. Appl. Agric. Trop. 15: 913. 1935; Mold., Suppl. List Comm. Vern. Names 1 & 15. 1940; Worsdell, Ind. Lond. Suppl. 1: 132. 1941; Lemée, Dict. Descrip. Syn. Gen. Fl. Phan. 8b: 653. 1943; Erdtman, Svensk Bot. Tidsk. 39: 281—284. 1945; H. N. & A. L. Mold., Pl. Life 2: 20, 22—24, 28, 30, 33, 51, 56—58, 62, 67, 74, 80, 81, 83, 89, & 94. 1948; Kidd, Wild Fls. Cape Penins. viii, pl. [40], fig. 6. 1950; Metcalfe & Chalk, Anat. Dicot. 2: 1031, 1032, & 1040. 1950; Lawrence, Taxon. Vasc. Pl., imp. 1, 687 & 782. 1951; J. C. Willis, Dict. Flow. Pl., ed. 6, 90. 1951; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 279 & 294—295, fig. 127. 1957; Dalla Torre & Harms, Gen. Siphonog., imp. 2, 430. 1958; Rickett & Stafleu, Taxon 9: 84. 1960; Dalla Torre & Harms, Gen. Siphonog., imp. 3, 430. 1963; Erdtman, Journ. Indian Bot. Soc. 42A: 35—38. 1963; Jafri, Fl. Karachi 286, 287, & 352. 1966; Martin & Drew, Journ. Ariz. Acad. Sci. 6: 140—161. 1970; Rouleau, Guide Ind. Kew. 28 & 352. 1970; Lawrence, Taxon. Vasc. Pl., imp. 2, 687 & 782. 1971; Mukhopadhyay, Pollen Morph. Verb. [thesis]. 1971; Mukherjee, Trans. Bose Res. Inst. 35: 37—42. 1972; J. Hutchins., Fam. Flow. Pl., ed. 3, 487 & 917. 1973; D. Powell, Bull. Inst. Jam. Sci. 15 (2): 424. 1973; Thanikaimoni, Inst. Franç. Pond. Trav. Sect. Scient. Tech. 12 (2): 20. 1973; García-Barriga, Fl. Med. Colomb. 2: 497. 1975; Thanikaimoni, Inst. Franç. Pond. Trav. Sect. Scient. Tech. 13: 39, 328, & 359. 1976; Ozenda, Fl. Sahara, ed. 2, 407. 1977; Anon., Roy. Bot. Gard. Kew Lib. Curr. Awarens. 11: 21. 1978; Bhandari, Fl. Indian Des. 308—309. 1978; Fournet, Fl. Illustr. Phan. Guad. Mart. 1391 & 1419. 1978; Mold., Phytologia 40: 413—423, 480, 505, & 507. 1978; Mukherjee & Chanda, Trans. Bose Res. Inst. 41, 44, 47, 48, 54, & 57. 1978; Steyermark & Huber, Fl. Avila 863, fig. 14a. 1978; Hocking, Excerpt. Bot. A. 33: 90. 1979; Holm, Pancho, Herberger, & Plucknett, Geogr. Atlas World Weeds 51. 1979; Klein, Sellowia 31: 163. 1979; López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979; Milz & Rimpler, Zeitschr. Naturforsch. Wiesb. 34C: 324 & 325. 1979; Mold., Phytologia 44: 506. 1979; Rogerson, Becker, & Prince, Bull. Torrey Bot. Club 106: 62. 1979; Troncoso in Burkart, Fl. Ilustr. Entre Ríos 5: 230. 1979; J. T. & R. Karteez, Syn. Checklist Vasc. Fl. 2: 466. 1980; Mold., Phytol. Mem. 2: 4, 25, 48, 54, 55, 59, 60, 70, 73, 75, 77, 78, 80, 85, 87, 93, 94, 97—101, 104, 107, 127, 132, 139, 173, 180, 185, 345, 375, 376, 396, 446, 448, 453, 463, & 524. 1980; Mold., Phytologia 45: 40, 352, & 504 (1980), 47: 456, 458, 459, & 503 (1981), 48: 451, 452, & 506 (1981), 50: 240, 243, 244, 257, & 504 (1982), and 52: 116 & 117. 1982.

The genus *Bouchea* is classified in the Boraginaceae by Rickett & Stafleu (1960), apparently as the result of a typographic or

editorial error.

The Graham & Johnston 4415, distributed as Bouchea sp., actually is Ghinia curassavica f. parvifolia Mold.

BOUCHEA AGRESTIS Schau.

Additional bibliography: Mold., *Phytologia* 40: 415. 1978; Hocking, *Excerpt. Bot. A.* 33: 90. 1979; Mold., *Phytol. Mem.* 2: 139 & 524. 1980.

BOUCHEA BOLIVIANA (Kuntze) Mold.

Additional bibliography: Mold., *Phytologia* 40: 415. 1978; Mold., *Phytol. Mem.* 2: 173, 185, 375, 376, & 524. 1980.

Beck refers to this plant as a common herb, 1.2 m. tall, on riverbanks, at 400 m. altitude, and states that the corollas are "blue".

Additional citations: BOLIVIA: Santa Cruz: S. G. Beck 6617 (Ld).

BOUCHEA BOYACANA Mold.

Synonymy: Buchea boyacana Mold. ex López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 17, sphalm. 1979.

Additional bibliography: Mold., *Phytologia* 40: 415 & 419. 1978; López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 17. 1979; Mold., *Phytol. Mem.* 2: 107, 132, 376, & 524. 1980.

BOUCHEA BOYACANA var. **GLABRATA** Mold.

Additional bibliography: Mold., *Phytologia* 40: 415 & 419. 1978; Mold., *Phytol. Mem.* 2: 132 & 524. 1980.

BOUCHEA CHASCANOIDES Mold.

Additional bibliography: Mold., *Phytologia* 29: 44. 1974; Mold., *Phytol. Mem.* 2: 139 & 524. 1980.

Hatschbach & Kasper describe this plant as a shrub, 1.5 m. tall, with "blue" corollas, and found it growing in "encosta rochosa de morro", flowering in October.

Additional citations: BRAZIL: Minas Gerais: Hatschbach & Kasper 41633 (Ld).

BOUCHEA CIPOÉNSIS Mold.

Additional bibliography: Mold., *Phytologia* 29: 44. 1974; Mold., *Phytol. Mem.* 2: 139 & 524. 1980.

BOUCHEA DISSECTA S. Wats.

Additional bibliography: H. N. & A. L. Mold., *Pl. Life* 2: 74. 1948; Mold., *Phytologia* 40: 415. 1978; Mold., *Phytol. Mem.* 2: 59, 375, & 524. 1980; Mold., *Phytologia* 50: 240. 1982.

Recent collectors describe this plant as an erect, tall herb, 30-80 cm. tall, and have found it growing in secondary vegetation, in soil from metamorphic rocks (mármol), and abundant in sandy clay soil with matorral vegetation of the low, spiny, deciduous type, along with Stenocereus quevedonis, at 100-400 m. altitude, flowering and fruiting in September and October. The corollas are said

to have been "purple" on Soto Nuñez 1074 and Soto Nuñez & al. 1141 & 1642 and "lilac" on Delgado & al. 77. The Soto Nuñez & Ramírez S. 1642 collection, cited below, exhibits leaves which in some cases have only a very few large lobes.

Additional citations: MEXICO: Jalisco: Delgado, Hernández, & Trejo 77 (Me--200550). Michoacán: Soto Nuñez 1074 (Me--290292); Soto Nuñez & Ramos 1141 (Me--284134); Soto Nuñez & Ramírez S. 1642 (Me--289868).

BOUCHEA FLABELLIFORMIS M. E. Jones

Additional bibliography: Mold., *Phytologia* 29: 45. 1974; Mold., *Phytol. Mem.* 2: 60 & 524. 1980.

BOUCHEA FLUMINENSIS (Vell.) Mold.

Additional synonymy: Buchea fluminensis Vell. ex López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 17, sphalm. 1979.

Additional & emended bibliography: D. Dietr., *Syn. Pl.* 3: 596. 1843; Walp., *Repert. Bot. Syst.* 4: 11-12 & 34. 1845; Bocq. in Baill., *Adansonia*, ser. 1 [Rec. Obs. Bot.] 3: 237. 1863; Bocq., *Rev. Verbenac.* 237. 1863; Baill., *Hist. Pl.* 11: 94. 1891; Prieq. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 1, 4 (3a): 143. 1895; Herzog, *Meded. Rijks Herb. Leid.* 29: 46. 1916; Grenz., *Ann. Mo. Bot. Gard.* 13: 85, pl. 11 & 12. 1926; Pio Corrêa & Pena, *Dicc. Pl. Uteis Bras.* 3: 395. 1931; Mold., *Phytologia* 40: 415-416. 1978; Mukherjee & Chanda, *Trans. Bose Res. Inst.* 41: 47. 1978; Klein, *Sellowia* 31: 163. 1979; López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 17. 1979; Mold., *Phytol. Mem.* 2: 127, 132, 139, 173, 180, 185, 345, 376, & 524. 1980.

Additional illustrations: Grenz., *Ann. Mo. Bot. Gard.* 13: pl. 11 & 12. 1926.

Pio Corrêa & Pena (1931) say of this plant: "Reputada anti-emética e estimulante do aparelho digestivo", giving its natural distribution as "Amazonas e desde a Bahia até S. Paulo e Minas Gerais, talvez em todo o Brasil". He avers that in São Paulo it is called "gervão de fôlha grande", while in Minas Gerais it is known as "gervão de fôlha larga". He seems to recommend the name, "gervão falso".

Erdtman (1945) reports that in B. fluminensis, as well as in B. prismatica (L.) Kuntze and B. rusbyi Mold., the pollen grains are "usually triporate and of a rather strange appearance" — this is in contradistinction to the tricolporate grains in Chascanum and the tetra- or pentacolporate grains in B. linifolia A. Gray. He suggests that the genus Bouchea should, perhaps, be divided into 2 sections, the one with colporate grains (as in B. linifolia or probably also the related B. spathulata Torr.), and the other with porate grains. "Pollenmorphologically this would form some sort of a parallel to the two sections of Morina mentioned in Erdtman 1945."

Recent collectors refer to this plant as an herb, less than a meter tall, and have found it growing in more or less open campo

with secondary vegetation, in clay soil at the edge of pastures, in cacao plantations, and in matorral, at 350—800 m. altitude, flowering from February to April as well as in November and December. Other collectors refer to it as as herb, 0.4—1 m. tall, perennial.

The corollas are said to have been "blue" on Gentry 10063, Pinheiro & Santos 2283, and Rimachi Y.4129, "rose with a white center" on Santos 2051, "pale purplish-mauve, white in the throat" on Renvoize 3485, "dark-blue" on Beck 7494, and "violet" on Steinbach 789.

The Eggers 14618 specimen in the United States National Herbarium is not B. fluminensis, as are duplicates of this number elsewhere, but is Stachytarpheta cayennensis (L. C. Rich.) Vahl, so the number seems to represent a mixture.

Additional citations: ECUADOR: Guayas: Gentry 10063 (Go). PERU: Madre de Dios: Vargas C. 18826 (W—2702696). San Martín: Rimachi Y.4129 (N). BRAZIL: Espírito Santo: Pinheiro & Santos 2283 (W—2849207); T. S. Santos 2051 (W—2849210). BOLIVIA: La Paz: S. G. Beck 7494 (Ld). Santa Cruz: R. F. Steinbach 789 (Lb—64883). ARGENTINA: Jujuy: Renvoize 3485 (N, W—2894517). Misiones: Krapovickas, Cristóbal, & Maruñak 15732 (Ws, Ws).

BOUCHEA FLUMINENSIS f. ALBIFLORA Mold.

Additional bibliography: Mold., Phytologia 29: 48—49. 1974; Mold., Phytol. Mem. 2: 139 & 524. 1980.

BOUCHEA FLUMINENSIS var. PILOSA Mold.

Additional bibliography: Mold., Phytologia 40: 416. 1978; Mold., Phytol. Mem. 2: 139, 185, 376, & 524. 1980.

BOUCHEA INOPINATA Mold.

Additional bibliography: Mold., Phytologia 40: 416. 1978; Mold., Phytol. Mem. 2: 139, 376, & 524. 1980.

BOUCHEA LINIFOLIA A. Gray

Additional bibliography: Mold., Phytologia 40: 416—417. 1978; J. T. & R. Kartesz, Syn. Checklist Vasc. Fl. 2: 466. 1980; Mold., Phytol. Mem. 2: 48, 54, 60, & 524. 1980.

Recent collectors describe this plant as a small perennial herb or woody-based subshrub and have found it growing in crevices in limestone arroyos with Quercus invaginata, Acacia berlandieri, Gochnatia, Helietta, Brahea, Condalia, Brickellia, etc. in a general area of Tamaulipan scrub, at 1100—1660 m. altitude, in flower in May, and in both flower and fruit in June and September.

The corollas are said to have been "lavender, lighter in the throat" on the Wendt & Riskind collection, cited below, and "bright-reddish" on the Gentry & Engard collection. The two latter collectors encountered it on sunny rocky slopes, while Stew-

art refers to it as a common shrub on dry rocky hillsides.

Erdtman (1945) describes the pollen grains of B. linifolia as tetra- or pentacolpate and suggests that this species, and probably the related B. spathulata Torr., should perhaps constitute a separate subsection or section in the genus.

Additional citations: TEXAS: Pecos Co.: Correll & Hanson 29885 (Mi). Val Verde Co.: Rowell 15274 (Me-128181). MEXICO: Coahuila: Gentry & Engard 23233 (Me-163875); Gould 10605 (Mi); R. M. Stewart 645 (Me-203734); Wendt & Riskind 1726 (Au, Me-263229).

BOUCHEA NELSONII Grenz.

Additional & emended bibliography: Grenz., Ann. Mo. Bot. Gard. 13: 83-84, pl. 10 & 12. 1926; Worsdell, Ind. Lond. Suppl. 1: 132. 1941; H. N. & A. L. Mold., Pl. Life 2: 74. 1948; Mold., Phytologia 40: 417. 1978; Mold., Phytol. Mem. 2: 60, 70, 75, 78, 80, 345, & 524. 1980; Mold., Phytologia 50: 243 (1982) and 52: 117. 1982.

Additional illustrations: Grenz., Ann. Mo. Bot. Gard. 13: pl. 10 & 12. 1926.

Recent collectors have found this plant growing along open roadsides, in low grazed deciduous forests, gravelly soil in Acacia thorn forests, and on steep slopes with tropical deciduous forest in ravines, at 80-830 m. altitude, in both flower and fruit from August to October. They describe it as an herb, 30 cm. tall, the leaves gray-green beneath, and the 4 fertile stamens with yellow anthers. Webster and his associates report it a common roadside weed in Oaxaca, while Stevens refers to it as "uncommon along roadsides on floodplain" in Nicaragua. Matuda 164 & 6119 exhibit especially large leaves.

The corollas are described as having been "lavender" on Breedlove 42288, "purple" on Breedlove & Thorne 20872, "pale-purple" on D'Arcy 12033, "lavender-pink" on Breedlove 28276, "purple, throat white but red above" on Rohweder 3362, and "lobes pink, tube white" on Clausen & Cervantes G. 6125, while on Stevens 3030 the corolla is said to have been "purple with a white center". On Zizumbo & Colunga 188 it is also described as "purple" and on Stevens 9980 "pale-purple".

The additional vernacular name, "xepepiend", is reported from Oaxaca.

Material of B. nelsonii has been misidentified and distributed in some herbaria as B. prismatica (L.) Kuntze, "B. prismatica (Jacq.) Kuntze", B. prismatica var. longirostra Grenz., Stachytarpheta sp., and Labiatae sp.

Additional citations: MEXICO: Chiapas: Breedlove 28276 (Me-228588), 42288 (Me-24425); Breedlove & Thorne 20872 (Me-200017); Clausen & Cervantes G. 6125 (It, Me-214886, N); Matuda 16922 (Me-81718). Guerrero: Boege 1916 (Me-96089). Oaxaca: D'Arcy 12033 (Ld); Hernández M. 50a (Me-137745); Matuda 164 (Me-81686),

6119 (Me--81687); Pennell, Dunn, & Dziekanowski 370 (Me--258735); Webster, Miller, & Miller 13000 (Me--133600); Zizumbo & Colunga 188 (Me--268234). NICARAGUA: Esteli: W. D. Stevens 9980 (Ld). Matagalpa: W. D. Stevens 9828 (Ld). Nueva Segovia: W. D. Stevens 3030 (Ld). EL SALVADOR: La Libertad: Rohweder 3362 (E--2681486).

BOUCHEA NOTABILIS Mold.

Synonymy: Buchea notabilis Mold. ex López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979.

Additional bibliography: Mold., Phytologia 29: 51. 1974; López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979; Mold., Phytol. Mem. 2: 107, 376, & 524. 1980.

BOUCHEA PRISMATICA (L.) Kuntze

Additional & emended synonymy: Buchea prismatica var. prismatica [(L.) Kuntze] apud Alain in León & Alain, Fl. Cuba, imp. 1, 4: 294. 1957. Buchea prismatica var. prismatica Alain apud Mold., Fifth Summ. 1: 400, in syn. 1971. Buchia prismatica (L.) Kuntze ex López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979. Buchea enbergii Cham. ex Holm, Pancho, Herberger, & Plucknett, Geogr. Atlas World Weeds 51, sphalm. 1979.

Additional & emended bibliography: Sandmark in L., Amoen. Acad. 5: 375. 1759; J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 2, 2: 41. 1791; Lam., Tabl. Encycl. Méth. Bot. 1: 59. 1791; Spach, Vég. Phan. 9: 227. 1840; Endl., Enchirid. Bot. 312. 1841; Reichenb., Deutsch. Bot. [Repert. Herb. Nom.] 108. 1841; D. Dietr., Syn. Pl. 3: 596. 1843; Walp., Repert. Bot. Syst. 4: 11-12 & 34. 1845; Lindl., Veg. Kingd. 664. 1847; Bocq. in Baill., Adansonia, ser. 1 [Rec. Obs. Bot.] 3: 237. 1863; Millsp., Field Columb. Mus. Publ. Bot. 1: 523. 1902; Urb., Symb. Antill. 4: 532-533. 1911; Grenz., Ann. Mo. Bot. Gard. 13: 78-80 & 90, pl. 9 & 12. 1926; Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 603. 1927; Ekman, Arkiv Bot. Stockh. 22A: 51. 1929; Mold., Suppl. List Comm. Vern. Names 14. 1940; Worsdell, Ind. Lond. Suppl. 1: 132. 1941; H. N. & A. L. Mold., Pl. Life 2: 33, 57, & 58. 1948; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 294-295, fig. 127. 1957; D. Powell, Bull. Inst. Jam. Sci. 15 (2): 424. 1973; García Barriga, Fl. Med. Colomb. 2: 497. 1975; Fournet, Fl. Illust. Phan. Guad. Mart. 1419. 1978; Mold., Phytologia 40: 417-421. 1978; Mukherjee & Chanda, Trans. Bose Res. Inst. 41: 47. 1978; Steyermark & Huber, Fl. Avila 863 & 864, fig. 14a. 1978; Holm, Pancho, Herberger, & Plucknett, Geogr. Atlas World Weeds 51. 1979; López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979; Mold., Phytologia 44: 102. 1979; J. T. & R. Kartesz, Syn. Checklist Vasc. Fl. 2: 466. 1980; Mold., Phytol. Mem. 2: 25, 48, 55, 60, 70, 73, 75, 77, 78, 85, 87, 93, 94, 97-101, 104, 107, 114, 127, 139, 345, 376, 396, 446, 448, 453, 463, & 524. 1980; Mold., Phytologia 47: 458 (1981), 50: 240, 244, & 257 (1982), and 52: 116. 1982.

Emended illustrations: Alain in León & Alain, Fl. Cuba, imp. 1, 4: 294, fig. 127. 1957.

Recent collectors describe this plant as a "weed" and have found it growing in waste places, in loose rocky soil on hill-sides, in sedimentary rock creekbeds, and on slopes with Croton, Heliocarpus, and Erythrina, at 800-1150 m. altitude, in flower in April, June, August, and December, and in fruit in June and August. Ekman (1929) describes it as "a weed, not rare, throughout Haiti".

The corollas are said to have been "mauve" on Alston 5438, "purple" on Hernández & Mancías 1129, and "violet" on Molina R. 76.

Erdtman (1945) describes the pollen grains as triporate and "of a rather strange appearance", as they also are in B. fluminensis (Vell.) Mold. and B. rusbyi Mold., but as they are not in B. linifolia A. Gray.

The type of B. ehrenbergii Cham., a synonym of the present taxon, was photographed in the Berlin herbarium by Macbride as his photograph number 17582.

Knuth (1927) cites from Venezuela the following collections: Federal District: Moritz 293, Otto 797, Pittier 7887 & 9729, Vargas s.n., Wagener 44. Miranda: Pittier 5830 & 5832. Margarita Island: Miller & Johnston 205. He makes the curious statement that B. prismatica is not based on Verbena prismatica L. and so "L." does not belong in the authority citation. This claim is erroneous.

Material of typical B. prismatica has been misidentified and distributed in some herbaria as its var. brevirostra Grenz. and even as "Stachytarphaeta" sp. and Verbena sp. On the other hand, the Breedlove & Thorne 20872, Boege 1916, Clausen & Cervantes G. 6125, Hernández M. 50a, Pennell, Dunn, & Dziekanowski 370, Webster, Miller, & Miller 13000, and Zizumbo & Colunga 188, distributed as B. prismatica, are all B. nelsonii Grenz., while Dziekanowski & al. 3392 is B. prismatica var. brevirostra Grenz.

Steyermark & Huber (1978), without justification, reduce B. prismatica var. brevirostra Grenz. to synonymy under typical B. prismatica. An examination of any series of specimens will show that the two taxa are distinct, provided the material is mature.

Additional citations: MEXICO: Chiapas: Ton 1385 (Mi). Morelos: Hunt 55 (Me-168651); A. N. Jackson 18 (Me-52962); Lyons 62 (Me-268153); Nye 8 (Me-52873). Oaxaca: Rowell, Webster, & Barkley 17M488 (Me-175751). State undetermined: Ehrenberg 112 [Macbride photos 17582] (Mi--photo). HONDURAS: Morazán: Molina R. 76 (Me-81717), 27186 (Mi). Yoro: Hernández R. & Mancías 1129 (Ld.). NICARAGUA: Department undetermined: Lévy s.n. (P). VENEZUELA: Carabobo: Mocquerys s.n. [Mariara] (P). Distrito Federal: Alston 5438 (W-2865582).

BOUCHEA PRISMATICA var. BREVIROSTRA Grenz.

Additional synonymy: Buchea prismatica var. brevirostra Grenz. ex López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17, sphalm.

1979.

Additional bibliography: Mold., *Phytologia* 40: 418-420. 1978; López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 17. 1979; J. T. & R. Kartesz, *Syn. Checklist Vasc. Fl.* 2: 466. 1980; Mold., *Phytol. Mem.* 2: 48, 55, 60, 70, 77, 99-101, 104, 107, 114, 376, & 524. 1980; Mold., *Phytologia* 50: 244. 1982.

Recent collectors refer to this plant as erect, 30 cm. tall, and have found it growing on open rocky cliffs, in heavily grazed thorn-scrub pastures with orchids and bromeliads on bark of Cassia, Acacia, and Crescentia, on semi-xeric rocky hillsides, on dry open roadsides, in open chaparral, among Quercus emoryi, in cultivated soil with Convolvulus, Cuphea, and Oxalis, and in association with cacti, Ipomoea arborescens, Celtis, Acacia, Maurandia, and composites, from sealevel to 2100 m. altitude, in both flower and fruit from July to October. Kishler found it abundant in association with Sanvitalia procumbens and Ipomoea longifolia. Stuessy refers to it as "common" in Chihuahua.

The corollas are said to have been "blue" on Kishler 786 and Matuda 21869, "violet to pale-blue" on Arguilles 816, "lavender" on Breedlove 20012 & 27654, and "purple" on Hernández M. 3655, Liogier & al. 29362, and Stuessy 1006.

Material of this variety has been misidentified and distributed in some herbaria as var. longirostra Grenz. On the other hand, the Rowell, Webster, & Barkley 17M488, distributed as and even previously cited by me as var. brevirostra, seems, instead, to be typical B. prismatica (L.) Kuntze.

Additional citations: MEXICO: Aguascalientes: Rzedowski 16193 (Me-75181). Chiapas: Breedlove 20012 (Me-227138), 26366 (Me-231860), 27654 (Me-227115). Chihuahua: LeSueur 136 (Me-50919); Stuessy 1006 (Me-136315). Distrito Federal: Lyonnet 317 (Me-239413, Me-239431), 667 (Me-239431); Sharp 44217 (Me). Durango: Xolocotzi, Rupert, & Guevara I. 2616 (Me-64810). Guanajuato: Barkley, Rowell, & Paxson 737 (Me-89307); Kishler 786 (Me-274936), 792 (Me-274937). Hidalgo: Hernández M. 2655 (Me-276501). Jalisco: Barkley, Webster, & Rowell 7642 (Me-173894); Harker & Mel-lowes 29 (Me-117925); Templeton 12027 (Mi). México: Gold 283 (Me-199553); Guizar N. 596 (Me-284943); Matuda 19070 (Me-64814), 21703 (Me-55581, Me-64812), 21869 (Me-64813, Me-109170), 26654 (Me-78676); Matuda & al. 28967 (Me-78675), 29343 (Me-78611). Michoacán: Arsène 3040 (Me-185498). Morelos: Humphreys 102 (Me-108615); A. W. Jackson 18 (Me-178981); C. H. Thomas 93 (Me-182721). Puebla: Miranda 2046 (Me-73216). Querétaro: Arguilles 130 (Me-89211), 816 (Me-210634). San Luis Potosí: Rzedowski 3767 (Me-96603). Sonora: Turner, Dodge, & Mason 2061 (Me-47250); S. S. White s.n. [2-3 Sept. 1939] (Me-89352). GUATEMALA: Jutiapa: Dziekanowski, Dunn, Trott, Thurm, Case, & Hess 3392 (N). PUERTO RICO: Liogier, Liogier, & Martorell 29362 (N). SOUTHERN

NETHERLANDS ANTILLES: Curaçao: Nagelkerken 127 (Ws). VENEZUELA: Aragua: Tamayo 4075 (N).

BOUCHEA PRISMATICA var. LACINIATA Grenz.

Additional bibliography: Mold., Phytologia 40: 420. 1978; Mold., Phytol. Mem. 2: 60 & 524. 1980; Mold., Phytologia 50: 240. 1982.

Matuda encountered this plant in low spiny matorral at 750 m. altitude.

Additional citations: MEXICO: México: Matuda & al. 31306 (Me-64818, Me-109193).

BOUCHEA PRISMATICA var. LONGIROSTRA Grenz.

Additional synonymy: Bouchea prismatica var. longirostra Grenz. ex López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17, sphalm. 1979. Bouchea prismatica var. longirostra Grezebak. ex Mold., Phytologia 50: 257, in syn. 1982. Bouchea prismatica var. longirostra Grezebach ex Mold., Phytologia 50: 257, in syn. 1982. Bouchea prismatica var. longirostrata Grezeb., in herb.

Additional & emended bibliography: Alain in León & Alain, Fl. Cuba, imp. 1, 4: 295. 1957; Mold., Phytologia 40: 420-421. 1978; Steyermark & Huber, Fl. Avila 864. 1978; López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 17. 1979; J. T. & R. Kartesz, Syn. Checklist Vasc. Fl. 2: 466. 1980; Mold., Phytol. Mem. 2: 25, 60, 73, 75, 85, 87, 93, 94, 97, 104, 107, 114, 376, & 524. 1980; Mold., Phytologia 50: 240 & 257. 1982.

Vázquez encountered this plant between 1000 and 1100 m. altitude, in flower and fruit in August. The corollas are said to have been "pink" on Xolocotzi & Alexander 111.

Steyermark & Huber (1978) without justification reduce this taxon to synonymy under typical B. prismatica (L.) Kuntze. Examination of any large series of specimens with mature fruit will show that it is plainly distinct.

The Kishler 786 & 792 and White s.n. [2-3 Sept. 1939], distributed as var. longirostra, actually represent var. brevirostra Grenz., while Breedlove 42288 is B. nelsonii Grenz.

Additional citations: MEXICO: Guerrero: Webster, Rowell, & Barkley 17M718 (Me-175699); Xolocotzi & Alexander 111 (Me-64811). Morelos: Vázquez 3335 (Me-157809). Oaxaca: Miranda 4566 (Me-70407, Me-70408). San Luis Potosí: Alcorn 2073 (Au).

BOUCHEA PSEUDOCHASCANUM (Walp.) Grenz.

Additional bibliography: C. Muell. in Walp., Ann. Bot. Syst. 5: 706. 1860; Pio Corrêa & Pena, Dicc. Pl. Uteis Bras. 3: 394. 1931; Mold., Phytologia 40: 421. 1978; Mold., Phytol. Mem. 2: 139, 345, 376, & 524. 1980.

Pio Corrêa (1931) says of this plant "Parece vegetar de preferência em terrenos arenosos" and gives its distribution as from Rio de Janeiro to São Paulo. He lists the vernacular names, "gervão bastardo" and "gervão falso".

BOUCHEA RUSBYI Mold.

Additional bibliography: H. N. & A. L. Mold., Pl. Life 2: 80. 1948; Mold., Phytologia 40: 421. 1978; Mold., Phytol. Mem. 2: 173 & 524. 1980.

Davidson encountered this plant among "somewhat disturbed vegetation on steep hillsides in the Holdridge life-zone which appears to be very moist subtropical rainforest grading into very moist lower montane rainforest, the latter especially over 4500-5000 feet elevation", in flower in November, and describes the "corolla-lobes" as "violet" in color. An in situ photograph accompanies his collection.

Erdtman (1945) reports that the pollen grains are "usually triporate and of a rather strange appearance", as are those of B. prismatica (L.) Kuntze and B. fluminensis (Vell.) Mold., but not those of B. linifolia A. Gray.

Additional citations: BOLIVIA: La Paz: Davidson 4869 (N).

BOUCHEA SPATHULATA Torr.

Additional bibliography: Mold., Phytologia 40: 421-423. 1978; Hocking, Excerpt. Bot. A.33: 90. 1979; J. T. & R. Kartesz, Syn. Checklist Vasc. Fl. 2: 466. 1980; Mold., Phytol. Mem. 2: 48, 60, & 524. 1980.

Eedtman (1945), while admitting that the pollen morphology of this species was at that time still unknown to him, suggests that it may belong in a separate section of the genus with B. linifolia A. Gray characterized by sessile leaves of the narrow sublinear type and pollen grains that are tetra- or pentacolpate, in distinction to a section comprising B. prismatica (L.) Kuntze, B. fluminensis (Vell.) Mold., B. rusbyi Mold., etc.

Stewart describes B. spathulata as common on hillsides in Coahuila, where it grows about 10-12 dm. tall, flowering in August with "lavender" corollas.

Additional citations: MEXICO: Coahuila: R. M. Stewart 1189 (Me-234457).

BOUCHEA SPATHULATA var. LONGIFLORA Mold.

Additional bibliography: Mold., Phytologia 40: 422-423. 1978; Hocking, Excerpt. Bot. A.33: 90. 1979; Mold., Phytol. Mem. 2: 60 & 524. 1980.

Recent collectors describe this plant as a common shrub, 1-3 feet tall, and have found it growing on gravelly-rocky limestone south-facing and lower bajada slopes covered by desert scrub of Acacia berlandieri, A. neovernicosa, Agave falcata, A. lecheguilla, Bouteloua spp., Bouvardia, Dasyliion, Flourensia solitaria, Forestiera angustifolia, Fouquieria, Hechtia, Krameria grayi, Leucophyllum minus, Mascagnia cana, Parthenium argentatum, Platypoynia, Rhus virens, Tiquilia, Viguiera stenoloba, and Yucca carnerosa, at 1550-1625 m. altitude, flowering in August. The corollas are said to have been "lavender" on both the collections cited

below.

Additional citations: MEXICO: Coahuila: Wendt & Lott 1407 (Au); Wendt, Lott, & Mispagel 1875 (Au, Me—259580).

ADDITIONAL NOTES ON THE GENUS CASSELIA. V

Harold N. Moldenke

The previous installment of my notes on this genus was published in *Phytologia* 40: 477—479 (1978). For a detailed explanation of the herbarium acronyms employed in this and all others in my long series of papers on verbenaceous and eriocauleaceous genera, see *Phytologia Memoirs* 2: 463—469 and *Phytologia* 50: 268. 1982.

CASSELIA Nees & Mart.

Additional bibliography: Cham., *Linnaea* 7: 364—366. 1832; Endl., *Gen. Pl.* 1: 634. 1838; Meisn., *Pl. Vasc. Gen.* 2: 199. 1840; Reichenb., *Deutsch. Bot. [Repert. Herb. Nom.]* 108. 1841; Brongn., *Enum. Gen. Pl.*, ed. 1, 65. 1843; D. Dietr., *Syn. Pl.* 3: 371, 605—606, & 618. 1843; Walp., *Repert. Bot. Syst.* 4: 39—40. 1845; Lindl., *Veg. Kingd.* 664. 1846; A. L. Juss. in *Orbigny, Dict. Univ. Hist. Nat.* 13: 184. 1849; Brongn., *Enum. Gen. Pl.*, ed. 2, 119. 1850; C. Muell. in Walp., *Ann. Bot. Syst.* 5: 705. 1860; Miers, *Trans. Linn. Soc. Lond. Bot.* 27: 102. 1871; Pfeiffer, *Nom. Bot.* 1 (2): 1855 (1874), 2 (1): 132 (1874), and 2 (2): 1593. 1874; Durand, *Ind. Gen. Phan.* 321. 1888; Baill., *Hist. Pl.* 11: 80 & 98. 1891; Briq. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 1, 4 (3a): 139—142, 157, & 158, fig. G—J. 1895; S. Moore, *Trans. Linn. Soc. Lond. Bot.* ser. 2, 4: 439 & 521. 1895; Briq. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 1, 4 (3a): [381]. 1897; Post & Kuntze, *Lexicon* 103 & 688. 1904; D. H. Scott in *Sclerod.*, *Syst. Anat. Dicot. [transl. Boodle & Fritsch]* 2: 1021. 1908; Nienburg, *Justs Bot. Jahresber.* 39 (2): 1051. 1916; J. C. Willis, *Dict. Flow. Pl.*, ed. 5, 124. 1925; Lemée, *Dict. Descrip. Syn. Gen. Pl. Phan.* 8B: 653. 1943; H. N. & A. L. Mold., *Pl. Life* 2: 22—24, 31, 53, 59, 61, 63, 73, & 83. 1948; Metcalfe & Chalk, *Anat. Dicot.* 2: 1031—1033 & 1040. 1950; Lawrence, *Tax. Vasc. Pl.*, imp. 1, 688. 1951; J. C. Willis, *Dict. Flow. Pl.*, ed. 6, 124. 1951; Dalla Torre & Harms, *Gen. Siphonog.*, imp. 2, 431. 1958; Rickett & Stafleu, *Taxon* 9: 84. 1960; Dalla Torre & Harms, *Gen. Siphonog.*, imp. 3, 431. 1963; Rouleau, *Guide Ind. Kew.* 37, 188, & 352. 1970; Lawrence, *Tax. Vasc. Pl.*, imp. 2, 688. 1971; Napp-Zinn, *Anat. Blatt.* A (1): 418. 1974; Mold., *Phytologia* 40: 477—479 & 506. 1978; Mukherjee & Chanda, *Trans. Bose Res. Inst.* 41: 40, 45, & 47. 1978; Hocking, *Excerpt. Bot. A* 33: 90. 1979; Rogerson, Becker, & Prince, *Bull. Torrey Bot. Club* 106: 62.